



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,805	12/15/2003	Terry Gilton	MI22-2462	4158
21567	7590	05/04/2004	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			GEYER, SCOTT B	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/736,805

Applicant(s)

GILTON ET AL.

Examiner

Scott B. Geyer

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 74-79 is/are allowed.
- 6) ☒ Claim(s) 48 and 51-73 is/are rejected.
- 7) ☒ Claim(s) 49 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1203,0304</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The references cited within the IDS papers, received on 12-15-03 (paper 1203) and 3-19-04 (paper 0304), have been considered, except for the following:

IDS paper 1203, reference "AI" on sheet 1 of 5: the information for patent 5,252,352 to Woo et al. is incorrectly listed. This patent reference is to Banach et al. for "Process for preparing an extra lowfat spread". Since the information provided is incorrect, this reference has been lined through and not considered.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: figure 5, reference numeral "37". A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet **within the range of 50 to 150 words** (emphasis added). It is important that the abstract not exceed 150 words in length since the space

Art Unit: 2829

provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The instant application's abstract is 249 words.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4A. Claims 58, 59 and 64-73 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The above cited claims all recite a "conductive line" which has not been mentioned in the applicant's specification. Applicant is advised to either cancel the claims, or amend the claims to reflect that which has support in the specification, i.e. change "conductive line" to "transistor".

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5A. Claim 62 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 62, line 2 recites "second material recesses". However, independent claim 60 recites "second etching into the *at least one second material outer lateral edge* to recess it". Therefore, the independent claim recites *one* or *two* lateral edges recessed, providing *one* or *two* recesses. The dependent claim conflicts with the limitations of the independent claim by definitively reciting recesses (i.e., plural recesses, no less than two). Claim 62 should be amended to recite "to fill the at least one second material recess" to overcome this rejection.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6A. Claims 48, 51-57 and 60-63 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-8, 12 and 17-19 of U.S. Patent No. 6,143,611. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to one of ordinary skill in the art to provide substantially linear continuous straight lateral outer edges for the first and second conductive layers so as to provide a profile for making the source and drain regions directly adjacent the gate stack, as in independent claims 48 and 60 of the instant application. Dependent claims 51-57 and 61-63 of the application are duplicates of dependent claims 3-8, 12 and 17-19 of the patent, respectively.

Allowable Subject Matter

7. Claim 49 is objected to as being dependent upon a rejected base claim, but would be allowable **if rewritten in independent form including all of the limitations of the base claim and any intervening claims.** The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding either the first or second conductive material comprising a conductively doped semiconductive material and the other comprising a refractory metal, as recited in claim 49. Claim 50 is dependent upon claim 49.

8. Claims 74-79 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter - - the prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding:

As to claim 74, a method of fabricating a transistor gate stack including first and second material layers that are "*patterned*"; wherein the second material has a higher oxidation rate than the first, and wherein the oxidation coating over the first and second material layers forms a "substantially continuous straight linear outer edge". For claim 74, the examiner interprets "*patterned*" to mean the second material is treated in such a way that its outer edge profile is smaller, i.e. recessed, than the first material outer edge, this being the only way the examiner can reasonably assess the oxidation layer to have a straight linear edge after both first and second materials are oxidized. The examiner's interpretation of claim 74 finds direct support in the applicant's specification and drawings. Claims 75 and 76 are dependent upon claim 74.

As to claim 77, a method of forming an oxide layer on a transistor gate stack, including a step of "*compensating for different oxidation rates of transistor gate stack materials*" and wherein an oxidation layer formed has "substantially continuous straight linear outer edges". For claim 77, the examiner is interpreting the step of "compensating for different oxidation rates of transistor gate stack materials" to mean there are at least two different material layers comprising the gate stack, and the step of "compensating" is interpreted as being treating at least one of the at least two materials in such a way that its outer edge profile is smaller, i.e. recessed, than the other of the at least two materials, this being the only way the examiner can reasonably assess the

oxidation layer to have a straight linear edge after both first and second materials are oxidized. The examiner's interpretation of claim 77 finds direct support in the applicant's specification and drawings. Claims 78 is dependent upon claim 77.

As to claim 79, a method of forming an oxide layer on a transistor gate stack, including a step of patterning first and second materials to form a gate stack wherein the second material has a higher oxidation rate than the first, and including a step of *"altering a profile of the vertically aligned side surfaces to compensate for different oxidation rates"* of the two materials, such that the oxidation layer forms "substantially continuous straight linear outer edges" on the gate stack. For claim 79, the examiner is interpreting the step of "altering a profile of the vertically aligned side surfaces to compensate for different oxidation rates" to mean treating the gate stack second material in such a way so that its outer edge profile is smaller, i.e. recessed, than the first material outer edge, this being the only way the examiner can reasonably assess the oxidation layer to have a straight linear edge after both first and second materials are oxidized. The examiner's interpretation of claim 79 finds direct support in the applicant's specification and drawings.

Conclusion


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott B. Geyer whose telephone number is (571) 272-1958. The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. E-mail: scott.geyer@uspto.gov

Art Unit: 2829

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SBG 4-28-04
SBG
April 28, 2004


KAMAND CUNEO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800